

## AMENDMENTS TO THE DRAWINGS

A Replacement Sheet for Sheet 2 of the drawings as originally filed is included herewith as APPENDIX A. The changes in the Replacement Sheet include the addition of the reference characters "IM" and "F" to FIG. 3A. These changes are made to address the Examiner's objection to the drawings in the 6/30/2006 Office Action.

## ***REMARKS***

In order to address certain formalities, claims 1, 8, 13-15 and 17-19 have been amended. New claims 21-24 have been added merely to provide dependent claim support. No new matter has been added. Accordingly, claims 1-24 are all of the pending claims. Claims 4-8 and 11-13 are currently withdrawn from consideration. In view of the following remarks, reconsideration and allowance of all the pending claims is anticipated.

### ***Examiner Interview***

Applicant thanks the Examiner for the courtesy extended to Applicant's representative in the telephonic Examiner Interview conducted on July 13, 2006. In the Interview, the Examiner acknowledged the finality of the 6/30/2006 Office Action was an inadvertent error, and that Applicant's response to the 6/30/2006 Office Action would be examined as a response to a non-final Office Action.

### ***Objections to the Drawings***

The Examiner has objected to the drawings on the grounds that they do not show every feature of the claimed invention. In light of the amendments to the specification and drawings presented above, Applicant believes that this objection is moot.

### ***Rejections Based On Orino and Inoue***

The Examiner has rejected claims 1-3, 9, 10, 14, and 17-20 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent Application Publication No. 2003/0020892 to Orino ("Orino") in view of U.S. Patent No. 5,673,103 to Inoue *et al.* ("Inoue"). Applicant traverses the rejections at least because the cited portions of Orino and Inoue do not disclose, teach or suggest the claimed invention. However, solely in an effort to expedite prosecution, Applicant has amended independent claims 1, 18 and 19 to further recite the claimed invention.

#### **I. Claims 1-3, 9, 10, 14, 17, 19 and 20.**

The cited portions of Orino and Inoue, alone or in combination, do not disclose, teach, or suggest all of the features of the claimed invention of claims 1-3, 9, 10, 14, 17, 19 and 20. For example, the cited portions of Orino and Inoue do not disclose, teach or suggest "**at least one pupil shaping element constructed and**

**arranged to define an on-axis, substantially rectilinear intensity distribution on the beam at a pupil plane of the illumination system; and a polarizer constructed and arranged to impart a linear polarization to the beam," as is recited by independent claim 1. Independent claim 19 recites similar features.**

The Examiner states that a masking blade 160 of Orino corresponds to the at least one pupil shaping element of the claimed invention. See the 6/30/2006 Office Action, page 4. Applicant respectfully disagrees. The masking blade 160 is a standard mechanism to define an illumination field on the mask (patterning device) to restrict an exposure area to be scanned. See Orino, paragraph [0004], lines 14-15. The masking blade 160 is not configured to define an on-axis, substantially rectilinear intensity distribution on the beam at a pupil plane of the illumination system. Indeed, the masking blade 160 is arranged to define an illumination field at an image/object plane as noted in Orino: "[the illumination apparatus of Orino] arranges an exposure plane on the wafer, a pattern plane on the mask, and a plane of the masking blade 160A in a conjugate relationship." Applicant would note that Orino's disclosure is similar in this regard to U.S. Patent No. 5,729,331 to Tanaka et al., which was cited by the Examiner against these claims in the Office Action of September 22, 2005 and the arguments against which the Examiner found persuasive in the Office Action of March 13, 2006.

Moreover, the Examiner admits that Orino does not teach or suggest a polarizer that linearly polarizes the beam. See the 6/30/2006 Office Action, page 5. The Examiner relies on a linear polarizer that is allegedly taught by Inoue as being analogous to this aspect of the claimed invention. *Id.* However, even if the Examiner is correct in maintaining that Orino teaches a pupil shaping element as claimed (which Applicant expressly disagrees with as discussed) and Inoue suggests the implementation of a polarizer to impart a linear polarization to a beam, Applicant submits that the Examiner has not made a proper showing of a motivation, suggestion or teaching to combine these aspects from Inoue and/or Orino. The Examiner asserts that a person skilled in the art would be motivated to form this combination "to obtain a substantially higher intensity beam". Respectfully, this combination would have nothing to do with obtaining a substantially higher intensity beam. Use of the claimed pupil shaping element with polarized radiation would not

increase the intensity of that radiation. It would either not affect it all or cause a decrease of intensity. Moreover, the Examiner has not identified this motivation in either Orino or Inoue. The Examiner also has not identified any specific teaching or suggestion to combine these features – rather, Examiner has simply selected alleged teachings of these disparate aspects of the claimed invention and then simply asserts that they can be combined without any reference to either Orino or Inoue as to a suggestion or teaching to combine them. Indeed, Applicant submits there is no such suggestion or teaching as neither Orino or Inoue has a hint of suggestion or teaching as to what the other lacks to form the claimed combination.

For at least these reasons the rejection of claims 1 and 19 based on the cited portions of Orino and Inoue relied on by the Examiner should be withdrawn. Further, claims 2-3, 9, 10, 14, 17, and 20 depend from corresponding ones of claims 1 and 19. Therefore, the rejection of claims 2-3, 9, 10, 14, 17, and 20 should be withdrawn based on their dependency as well as for the features that they recite individually.

II. Claim 18

The cited portions of Orino and Inoue, alone or in combination, do not disclose, teach, or suggest all of the features of the claimed invention of claim 18. For example, the cited portions of Orino and Inoue do not disclose, teach or suggest “**at least one pupil shaping element constructed and arranged to impart an intensity distribution that is not symmetric in an interchange of two orthogonal axes at a pupil plane of the illumination system; and a polarizer configured to impart a linear polarization to the beam,**” as is recited in claim 18.

As noted above, Applicant respectfully submits that the masking blade 160 of Orino is not configured to define an on-axis, substantially rectilinear intensity distribution on the beam at a pupil plane of the illumination system. Rather, the masking blade 160 is arranged to define an illumination field at an image/object plane as noted in Orino: “[the illumination apparatus of Orino] arranges an exposure plane on the wafer, a pattern plane on the mask, and a plane of the masking blade 160A in a conjugate relationship.” Moreover, Applicant would note that Orino’s disclosure is similar in this regard to U.S. Patent No. 5,729,331 to Tanaka et al., which was cited by the Examiner against these claims in the Office Action of

September 22, 2005 and the arguments against which the Examiner found persuasive in the Office Action of March 13, 2006.

Further, as discussed above, even if the Examiner is correct in maintaining that Orino teaches a pupil shaping element as claimed (which Applicant expressly disagrees with as discussed) and Inoue suggests the implementation of a polarizer to impart a linear polarization to a beam, Applicant submits that the Examiner has not made a proper showing of a motivation, suggestion or teaching to combine these aspects from Inoue and/or Orino. The Examiner asserts that a person skilled in the art would be motivated to form this combination "to obtain a substantially higher intensity beam". Respectfully, this combination would have nothing to do with obtaining a substantially higher intensity beam. Use of the claimed pupil shaping element with polarized radiation would not increase the intensity of that radiation. It would either not affect it at all or cause a decrease of intensity. Moreover, the Examiner has not identified this motivation in either Orino or Inoue. The Examiner also has not identified any specific teaching or suggestion to combine these features – rather, Examiner has simply selected alleged teachings of these disparate aspects of the claimed invention and then simply asserts that they can be combined without any reference to either Orino or Inoue as to a suggestion or teaching to combine them. Indeed, Applicant submits there is no such suggestion or teaching as neither Orino or Inoue has a hint of suggestion or teaching as to what the other lacks to form the claimed combination.

For at least these reasons the rejection of claim 18 based on the cited portions of Orino and Inoue relied upon by the Examiner should be withdrawn.

***Rejections Based On Orino, Inoue, and Nishi***

The Examiner has rejected claim 15 under 35 U.S.C. §103(a) as allegedly being unpatentable over Orino in view of Inoue, and in further view of U.S. Patent 6,608,665 to Nishi ("Nishi"). Applicants traverse this rejection at least because Orino, Inoue, and Nishi do not disclose, teach or suggest the claimed invention of claim 15.

Claim 15 depends from claim 1 and as discussed above the cited portions of Orino and Inoue fail to disclose, teach or suggest claim 1. The cited passages of Nishi do not address the deficiencies of Orino and Inoue with respect to the subject matter of claim 1 addressed above. Rather, Nishi is merely cited to disclose

apertures. Therefore, the rejection of claim 15 should be withdrawn based on its dependency as well as for the features that it recites individually.

***Rejections based on Orino, Inoue, and Onanian***

The Examiner has rejected claim 16 under 35 U.S.C. §103(a) as allegedly being unpatentable over Orino in view of Inoue, and in further view of U.S. Patent 4,568,148 to Onanian ("Onanian"). Applicants traverse this rejection at least because Orino, Inoue, and Onanian do not disclose, teach or suggest the claimed invention of claim 16.

Claim 15 depends from claim 1 and as discussed above the cited portions of Orino and Inoue fail to disclose, teach or suggest claim 1. The cited passages of Onanian do not address the deficiencies of Orino and Inoue with respect to the subject matter of claim 1 addressed above. Onanian is merely cited to disclose a polarizer mounted in an aperture of a diaphragm. Therefore, the rejection of claim 16 should be withdrawn based on its dependency as well as for the features that it recites individually.

***New Claims***

New claims 21-24 have been added merely to provide dependent claim support to independent claims 18 and 19 and find support in the specification (for example, in claims 2 and 3). New claims 21-24 are patentable over the cited references at least because of the patentability of the independent claims from which they depend as discussed herein, as well as for the features they recite individually.

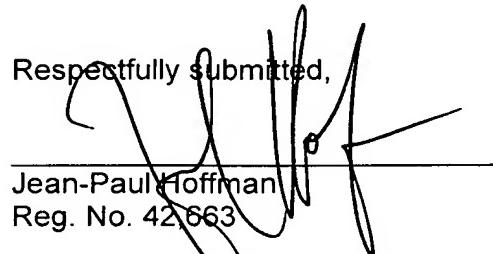
***CONCLUSION***

Having addressed each of the foregoing rejections and objections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is anticipated.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Date: September 14, 2006

By:

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# **APPENDIX A**